

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Aquatic Resources
Honolulu, Hawaii 96813

July 28, 2006

Board of Land and
Natural Resources
Honolulu, Hawaii

REQUEST FOR AUTHORIZATION TO ENTER INTO A DLNR/UH CONTRACT
FOR A RESEARCH PROJECT IN THE LONG-TERM, WIDE-RANGE MOVEMENT
OF ADULT SURGEONFISH WITHIN THE FISHERY REPLENISHMENT NETWORK
IN WEST HAWAII (\$45,271), TO BE CONDUCTED FROM
AUGUST 1, 2006 THROUGH AUGUST 31, 2007

Submitted herewith for your consideration is a request to enter into a Contract for Professional Services between the Department of Land and Natural Resources and the University of Hawaii (UH). The Contract funds a project titled "Long-term, Wide-range, Detailed Movement of Adult Surgeonfish within the Fishery Replenishment Area Network in West Hawaii". The Principal Investigator is Dr. James D. Parrish of the University of Hawaii, Department of Zoology, Hawaii Cooperative Fishery Research Unit.

Surgeonfish (or yellow tang) is the most important fish taken within the aquarium fishery in Hawaii. The State of Hawaii, and DAR in particular, have a large investment in an attempt to manage this fishery by use of a network of fisheries replenishment areas (MPAs for aquarium fishes). In order to improve understanding of the dynamics of the fishery, it is critical to understand movements of adult fishes within the network, and interpret the results of long-term monitoring data that DAR is producing. Such an effort will also increase the ability to manage the fishery through improved design and management of protected areas. The understanding of basic surgeonfish biology/ecology could be applicable to other surgeonfish species that are important in both the commercial and recreational fisheries in Hawaii.

The objective of this project is to track a number of individual yellow tang over long periods (4 months or more) using individually identifiable ultrasonic tags and passive fixed receivers. This will provide a more detailed record of the daily movement patterns of each individual and reveal whether these patterns are conserved over time.

The following specific questions will be addressed in this project:

- How far do these surgeonfish migrate during a single day?
- What is the timing of daily migrations?
- Are these migration patterns conserved over the long term?
- What habitat types are important to adult surgeonfish?

Movement data collected in the project will be placed in a GIS with detailed habitat maps of each site and analyzed to answer these focal questions. Such information is a necessary input toward estimating the magnitude of reproduction by adults within a replenishment area and the "spillover" of adults from replenishment areas to surroundings, which could benefit fisheries in those adjacent areas. These methods would also provide insight into the movement patterns of other surgeonfish species that share similar life histories and are important to both commercial and recreational fisheries in Hawaii, and may suggest appropriate strategies for their most effective management.

Findings in the forms of interim and final technical reports will be promptly submitted to DAR staff, the LAS Steering Committee, other reef researchers in the area, and other interested parties (by outreach). Findings will also be presented at appropriate levels: local (e.g., West Hawai'i Fishery Council, Hawai'i Conservation Conference), national (e.g., American Fisheries Society), and international meetings and symposia (e.g., International Coral Reef Symposium).

The Contract is for \$45,271 and runs from August 1, 2006 through August 31, 2007. Funding is provided entirely from federal funds through the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Coral Reef Conservation Act grant to Hawaii. The UH will provide the required federal match for a portion of these funds.

RECOMMENDATION:


"That the Board authorizes the Chairperson to negotiate and, subject to necessary approvals, enter into a Contract with the University of Hawaii."

Respectfully submitted,



DAN POLHEMUS
Administrator

APPROVED FOR SUBMITTAL:



PETER T. YOUNG
Chairperson